

Ø BEAT

P.O. BOX - 1797
COLO SPRINGS
COLORADO

1 APRIL 1962

EDITOR SPEAKS

What are you doing for the PPRAA? This is the question of the month.....

It has been noticed that the attendance of our monthly meetings has been getting slimmer each month. What are you doing to improve this? Do you tell your new Ham friends who have recently arrived in this area that we have a Ham Club? Well if you havn't, do it today. Let's get together and make our club something that every citizen of this area will be aware of.

Good advertisement by way of a service performed by any member of the PPRAA to the community will pay off with many dividends. Make your contribution today. Let your neighbors know that you are available to assist them in time of need, and invite them to visit with you some evening, and explain the workings of your hobby to them. You will be surprised how many different ideas they had about you before you explained what all that noise etc. was that they usually hear when walking by your QTH. If they have been experiencing TVI you must make every effort to clear up their problems even if you are not the offender. Otherwise they will go on thinking that you are to blame.

Help your organization by attending every meeting, and bring along a friend each time.

Let your club paper the Zero Beat speak for you by giving it your full support, and becoming active with a contribution each month to the Editor.

Until next month, 73 ES DX. Mike KØEVP....

TEAR OUT AND MAIL TO: EDITOR ZERO BEAT 835 N. UNION BLVD.
COLORADO SPRINGS, COLORADO.

I Have Moved, My New Address Is: _____

Please Send Zero Beat To: _____

I Do Not Wish To Receive The Zero Beat Because _____

NAME _____

If you are now
receiving Zero
Beat and your
address is correct,
remove form and
keep for future
address change etc.

MINUTES

The last meeting of the PPRAA was a big one. Many subjects of interest were covered. Among those discussed were; nomination of a new TVI Committee, the proposed establishment of a club Crystal Bank, new procedures to be used for the mailing of Zero Beat, and finally the subject of membership dues.

With the resignation of Major (Chip) Wendt, a devoted chairman of the TVI Committee for a number of years the club was at a loss for a replacement to head the new committee. We are happy to report that Sam Martin KØUYC came forward and saved the ship by volunteering for the vacant position. Along with Sam, Earl Leonard WØSWN, and Edgar Southward were elected unanimously by all the club members present. We are certain that their performance will be thorough, accurate and appreciated by any Ham who has ever had a TVI complaint.

Do you have any crystals that you are not now using? If so please contact Wally KØWMD at the next meeting or call him at ME 5-0524. The club will have available a crystal bank to be used by all of it's members, and especially the Novice licence holders. Lets give our full support to this new idea.

New mailing procedures for the Zero Beat. If you have moved, you must notify the Editor of your change of address. No Zero Beats will be mailed to those persons who have moved unless the new address is received by the Editor. A form is included with this month's issue for the purpose of saving time etc. when you wish to notify that your address has changed. Or if you do not wish to receive the Zero Beat you can inform the Editor of same.

Membership dues will be paid on the 1st. of Jan. each year by all members. If your dues are not paid at present, the fee will be 10¢ per month for the time remaining prior to Jan. 1st. 1963. This will enable the Secretary to keep a more accurate account of delinquent dues, and make them all payable at the same time. \$1.00 per year is more than reasonable, and we hope that when Jan. 1st. 1963 rolls around, all members will do thier best to get this matter taken care of first thing for the new year.

BULLETINS

NR 839 FROM ARRL HEADQUARTERS.

Arrl officical observers continue to send out advisory reports to amateurs for radiation of harmonics in frequency ranges outside the amateur bands. Amateurs, especially those newly licensed, are urged to make sure their transmitters and antennas are radiating at the desired output frequency rather than at some harmonic. All amateurs are requested to guide the new licensee in this respect and urge reading of an article entitled How To Avoid Radiation of Spurious Signals to appear on page 26 of the April QST. Help keep amateurs out of difficulty with the FCC for radiation of harmonics.

NR 841 FROM ARRL HEADQUARTERS.

The ARRL Executive Committee, at its meeting March 28, unanimously voted that the League is against the adoption by FCC of license fees for amateurs, as proposed in Hocket 12.50%. Appropriate comment expressing opposition to fees for amateurs will be filed with the Commission by the League. The deadline for comments by interested parties is April 16, 1962. Editors note: See page 9, April QST for more details on this.

Every member get a member! This is the current theme of ARRL for its drive to increase membership, and you can receive free, a ARRL lapel emblem pin, by doing so. See page 64 April CST. Along with this drive, how many new members can you sign up for the PPRAA? We are not offering any lapel pins etc. but you will be rewarded with self satisfaction that you have helped your club out, as well as got another amateur to belong to an organization devoted to the betterment of his hobby.

GOSSIP

The Pikes Peak Rag Chewers Club is looking for more ragchewers. Find out how you can qualify by checking in to the Sunday Evening Net at 9:00 pm. MST Sunday evening. on 14.250. You will be surprised who you will hear on this frequency from time to time. And who will vote on the motion (if it is brought up at the next meeting) that the PPRAA (your club) get started a weekly Net for the purpose of ragchewing and just plain having some fun?

Attention all members of the PPRAA who are Air Force Mars Members. You are requested to reply by mail to the Editor on your views and or suggestions as to the establishment of an Air Force Mars Net for the Colo. Springs area. If enough persons are intrested in becoming active in a Mars program, we must get together and and bring this suggestion to the attention of the Mars Director, Ent AFB.

PPRAA decals for your automobile will be available at the next meeting for all those attending for 25¢ each.

Dan KØVDM, has moved into Ham Land. The new QTH is Collier Ave. in the North East Section of our fair city. We understand that there are at least a half a dozen amateurs in this immediate vicinity.

Woody KØHZV has also recently moved. His new QTH is 610 Solano. Woody reports that he will have all the room he needs to set up a ham shack like he has always wanted. He will need some assistance as soon as the wether warms up in erecting some antennas.

Ken KØAUT has departed for a tour of duty with Uncle Sam at Clark AFB Phillipines. All of his friends in this area will be sorry to see him leave. During his stay in the Pikes Peak Region, Ken was instrumental in forming the Pikes Peak Rag Chewers Club, and a great help to many new amateurs just starting out. A fine Television Repairman in his own rite Ken will be missed by many of his satisfied customers. So Good Luck Ken, from the Gang at PPRAA!

Your club President John K4ILF/Ø, has a large assortment of 5D21's left over from the auction. Anyone needing this tube for SSB applications etc. can aquire same from John, by contacting him at the next meeting or at his home ME 5-5981.

Bob WA6ZMZ/Ø recently acquired his 2nd Class Commercial Ticket, and has since tried for the 1st Class. Results are not in yet, but we think Bob has finally made it...

HERE AND THERE ON 6 & 2

WØBEU Dick in Pueblo is about our only active contact in the Steel City on six. Dick recently underwent an operation and we are happy to report he is now back on the job.

KØYAW had some difficulty with his LW-51 but Kit is back on the air from his home QTH and is putting out a fine signal.

WA2CKV/Ø Jim at the Air Force Academy did some reconstruction on his Heath Sixer by changing the final to a 5763 and is now running about ten watts input. The antenna problem still plagues Jim in his location but the additional 3 db helps.

Understand there is some new activity on six coming from the Black Forest. My information is a little hazy in that it has been reported that W7CKR/Ø and possibly WØPKR are the calls heard and worked. Problem seems to be polarization difficulties. Fellas all the six meter gang operate horizontal polarization around these parts.-- Of course, there has been some comment that the six meter gang really does operate from a horizontal position. HI..

W5HLZ/Ø Lee dropped into the QTH over a month ago to say he would be on six shortly. Haven't heard any signals yet tho-. Has anyone any leads?

Added another rig at WØBAG, a Heath Sixer. So far the reports are good around town and to the Academy. I'm still amazed what the Sixer's will do with an antenna attached.

No band openings have been heard so far during the month of March. The seasonal change will be coming in soon and we expect to see quite a few openings.

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Contacts into Pueblo have been consistent on two this month. KØNVT Phil works into Security every Thursday with a home built 5763 rig. He keeps saying the rigs output is 3 watts. The gang in Pueblo verifies this too.

The Denver gang has dropped a bit due to Lenten activities. KØCAR took his rig to Rocky Ford one weekend to see how he could do. Signals were heard in Pueblo very weakly and not at all in Security.

WØFPT Bill Coe at the Black Forest is now sporting a Pueblo-made horizontal beam for his Gonset Communicator on two. For results he put 5/9 signals into both Pueblo and Denver. It certainly isn't the trees in the forest, but the altitude.

KØUYC Sam is also expected on two shortly running about 100 Watts AM. It will be interesting to see what some power on two will do out of the Colo. Springs area, especially with a good antenna.

Locally WNØAJC took delivery on a 62 WV, and has all his plans set for the equipment to be attached. Jim already has a brand new Multi-Elmac PMR-8 receiver installed. Six and Two are to be the primary bands with an 832 final on two and possibly an AMECO TX-86 on Six. A look at the specs for all this gear reveals some other bands are included, but Jim reassures me his first love is for 6 & 2. There are also possibilities the attached antenna farm may tip the bug.

Look for us all on 146.25 and 50.55..... 73, Ray — WØBAG

WANTED

Letters to the Editor.....Even your complaints will be graciously accepted. Address all correspondence, for sale, wanted, and activities etc. to: Mike Schmidt 835 North Union Blvd. Colo. Springs, Colo.

FOR SALE

75S-1 Collins Receiver, HT 32 Transmitter, both in A1 condition. Sell or trade for Small or Foreign Car. Call Lee W5HLZ/Ø at EX 2-7813

Filter Choke. (For the Biggest of Power Supplies) .4 Henrys @ 3.2 Amp. 3 Henrys @ 500 MA. DC Resistance 3.2 ohms. Test Voltage 10,000 Volts. best offer over 15.00. Call Mike KØEVP, ME 5-5723

TB 500 Beam. 10-15 & 20 meters. Good condition. \$40.00, Call ME5-1679 Evenings.

SCR-522, 2 Meter Transceiver with top rack, no case. \$15.00 If interested write to KØRFX 1413 West 11th. Junction City, Kansas.

SCHEMATIC OF THE MONTH

'The Crystal Ball' Submitted by your Editor, designed by W2CVV, taken from CQ Mobile Handbook First Edition.

The crystal ball is a combination S-meter, carrier meter and modulation level indicator for mobile use. A device such as this will give an indication of whether or not the transmitter is on the air, if it is modulated and the degree of modulation can be of great value for mobile operation, where the dynamotor whine or a single plate meter may be the only means of monitoring transmissions. In addition, the Crystal ball acts as a forward reading S-Meter when the receiver is in operation.

The Basic S-Meter Circuit.

A 0-150 microammeter acts as an indicator in a balanced bridge circuit, one leg of which is the plate resistance of an a-v-c controlled tube in the car receiver. The resistance values given with Fig. 1 are typical, and may need to be varied if the particular receiver or converter in use has a different plate voltage, if the no signal cathode voltage of the a-v-c tube is different, or if a meter of different sensitivity is used. If any one of those specified, the new values of the resistors may be calculated as follows:

1. Measure the a-v-c controlled tube cathode voltage (E_k) with no signal input to the receiver.
2. Measure the plate voltage (E_b) to which R_1 is connected.

$$R_1 \text{ plus } \frac{R_2}{2} \text{ equal } E_b \times 1000$$

$$R_3 \text{ equal } E_k \times 1000$$

$$R_4 \text{ plus } \frac{R_5}{2} \text{ equal } \frac{E_k}{I_m} \times 1000$$

(I_m is the full scale current reading of the meter in Milliampere)

The nearest standard resistor values may be used, and the results will be well within the range of adjustment of R_5 . As a rough check, R_5 , with half its resistance in the circuit should form from one-quarter to one-half of the total resistance of each leg.

3. With R_5 set at mid-scale, and no signal being received, adjust R_2 for zero reading on the meter. This occurs when the voltage at point A is the same as at E_k .

4. Now tune in an S9 signal. (You will have to decide what an S9 signal is!) Adjust R_5 until the meter reads at the point on the meter that you will call S9.

The Transmitting Monitoring Circuit.

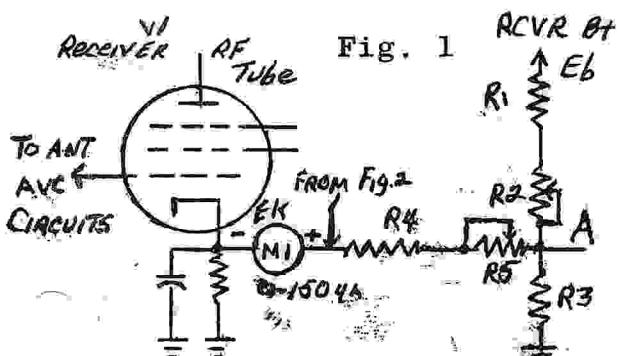
When transmitting the plate voltage is usually removed from the receiver and the S-Meter reads zero, and is thus available for other functions. The addition of a pick-up loop, coupled to the transmitter output tank circuit and a crystal rectifier will allow the meter to indicate the relative output power of the transmitter. The complete circuit allowing these two separate functions to operate the meter independently of each other is shown in Fig 2. The S-Meter circuit remains the same. R.F. from the transmitter tank is sampled by the pick-up loop and rectifier by X_1 . The output of this portion of the circuit is DC varying in amplitude at an audio rate with modulation. R_6 is included to protect the crystal from possible overload and burn-out. It should be mounted near the crystal. A portion of the d-c output near the crystal X_1 is fed directly to the meter through R_7 . This will provide about $\frac{1}{2}$ scale deflection of the meter from the carrier only, as an indication of carrier level. The remainder of the d.c. from X_1 is by-passed to ground by R_8 , but the audio components corresponding to modulation are rectified in X_2 and impressed on the meter through R_9 , causing it to swing from its carrier level toward full scale with modulation.

The constants shown in Fig 2 are intended to produce approximately $\frac{1}{2}$ scale deflection of the meter from the carrier, provided the coupling loop is so adjusted as to produce five volts of d.c. across R8. The meter will swing just about full scale under 100% voice modulation. If it is desired to reduce the modulation sensitivity, increasing the value of R9 will drop it effectively. R7 may be varied to control the carrier sensitivity. A jack is included across the output of X1. Plugging a pair of headphones into it will permit checking modulation quality.

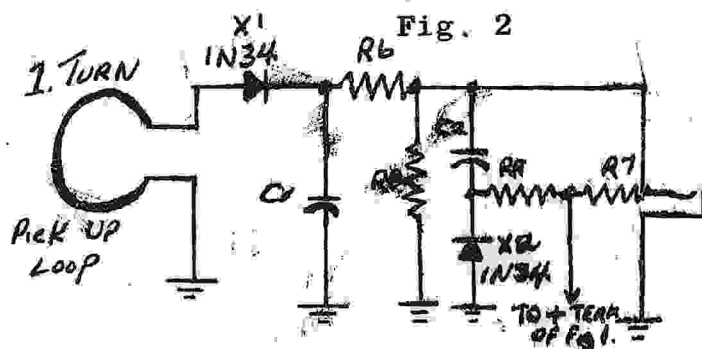
The pick-up loop will have to be adjusted for each transmitter, but to give an idea of where to start, one turn about $\frac{1}{2}$ inch from the "cold" end of the tank coil was found to be correct on both 75 meters and 10 meters with 40 watts input to the final amplifier.

Make all adjustments with the transmitter fully loaded, since both the tank current and crystal current go up with no-load operation.

Be sure the plate voltage is removed from the a-v-c controlled tube of the receiver and from the balancing network while transmitting otherwise the S-Meter current will be flowing through the meter during transmission monitoring periods.



R1-150,000 ohms $\frac{1}{2}$ watt.
 R2-100,000 ohms Pot, 2W
 R3-2000 ohms $\frac{1}{2}$ watt
 R4-5000 ohms $\frac{1}{2}$ watt
 R5-10K Pot 2 watt.



C1-500mmf Mica
 C2-.05mf, 200V
 R6-1000 ohms $\frac{1}{2}$ watt
 R7-82K $\frac{1}{2}$ watt
 R8-5000 ohms $\frac{1}{2}$ watt
 R9-10K $\frac{1}{2}$ watt

NEXT MEETING

The next meeting of the PPRAA will be held at the YMCA youth center at the corner of Weber and Bijou, Wednesday April 11, promptly at 8;P.M.

PPRAA OFFICERS

PRESIDENT: JOHN WALD K4ILF ME5-5981
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